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The hour of broadcasts is Central European Time, which is one hour ahead of Greenwich Mean Time and 5 hours ahead of Eastern Standard Time in the United States.

ACTIVITY OF THE INTERNATIONAL INSTITUTE OF AGRICULTURE

VIth Session of the Committee of the International Forestry Centre. — Detailed information on this session of the C. I. S. (Vienna, September 8-12, 1942) and on the administrative and technical questions contained in its agenda, will be given shortly.

Visit of H. E. Adrian C. Escobar. — H. E. Adrian C. Escobar, Ambassador of the Argentine Republic at Madrid, accompanied by Sr. Juan Carlo Goyeneche attaché of the Argentine Republic in Spain for cultural relations, visited the International Institute of Agriculture on August 17, 1942.

In the absence of the President, Baron G. Acerbo, H. E. Escobar was received by the Vice-President, Dr. Comolli, Delegate of Argentina in the Permanent Committee of the Institute, and by the Chiefs of the Institute Bureaux.

After a visit to the technical services and the Library, H. E. Escobar expressed his satisfaction and best wishes for the work of the Institute.

Editorial activities. — The International Institute of Agriculture has just published its *International Yearbook of Agricultural Legislation* (XXXIst of the series) which contains the agricultural legislation of the different countries during the year 1941. The Yearbook contains also an introductory article by Prof. G. Carrara on « La fonction sociale des institutions et des rapports juridiques agricoles dans la législation la plus récente des divers pays » (The social function of the agricultural institutions and of the juridical agricultural relations in the most recent legislation of the different countries).

Another publication that has just been issued, is the third volume of the series of the *Yearbooks of Forestry Statistics* dealing with forests, forestry production and international timber trade in Africa. This volume follows those already published on Europe and the U. S. S. R. (Vol. I) and on America (Vol. II).

The International Institute of Agriculture is also about to finish a statistical monograph on « *Le commerce international du bois (1925-1939)* ». This is a strictly documentary work connected with the studies prepared by the International Forestry Centre in the field of the international trade in forestry products.

The complete work, dealing with the timber trade in all countries of the world, will appear towards the end of the year 1942. However, since the tables referring to the European countries and to the U. S. S. R. are entirely up to date and may be of a particular interest at the present moment, the Institute has deemed it opportune to assemble them at once in a pamphlet that will be distributed among the delegates to the Sixth Session of the Committee of the International Forestry Centre.

A study concerning the International Institute of Agriculture. — The « Deutsche Zeitung in Kroatien » of May 31, 1942 contains a study of the International Institute of Agriculture emphasizing its complex activity up to the present time and the further development of such activity in view of post-war reconstruction needs.

The article reviews the most important publications of the Institute and remarks that they are received with the greatest interest in the different agricultural and economic circles of the world.

A reunion dealing with land management. — The Institute was represented at the IInd Italian Congress of technicians and students of the problem of the agricultural management of the land. The meeting was held in Rome on July 19-20.

At the end of the meeting, a resolution was passed, containing the following suggestions:

(1) that land management be always considered as a preliminary and inevitable necessity of a stable and advantageous agriculture in the measures taken by competent administrations, in the competitions opened by the State or public organizations, and finally in all the other manifestations of agricultural life;

(2) that a detailed plan of agricultural management dealing with the different cultural units be always made compulsory whenever instructions are given for land changes, and that systems and time of execution be always specified; also that the necessity of management in the preparation of organic land improvement plans for which State contributions or subsidies are requested, be always taken into account;

(3) that the State contributes towards helping the work of land management to the greatest possible extent;

(4) that, as was done in the case of the ' wheat battle ', an active propaganda be carried out among farmers appealing to their national spirit;

(5) that the consortia for land reclamation replace private concerns whenever the latter lack initiative, or their initiative is insufficient;

(6) that schools, public bodies (' enti ') and syndicate organizations to which the technical education and instruction of their members is confided, give at once the greatest attention to the question of the preparation of technicians and workmen for the agricultural management of the land.

BOOKS PRESENTED TO THE LIBRARY OF THE INTERNATIONAL INSTITUTE OF AGRICULTURE

R. Accademia d'Italia, Roma. Centro studi per il Vicino Oriente. Aspetti e problemi attuali del mondo musulmano. Roma, 1941. 203 p. (Conferenze e letture, v. 1).

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Alvisi, F. Nozioni di matematica finanziaria di inizio allo studio dell'estimo agrario. Bologna, Autore, 1942. 71 p.

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Arán, S. Ganado lanar y cabrio; su explotación económica. 4ª ed. esencialmente de divulgación y práctico. Madrid, Tip. Yagües, [1941]. [7], 573 p. (Biblioteca pecuaria).

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INTERNATIONAL BULLETIN
OF PLANT PROTECTION

1942 No. 9

DISCOVERIES AND CURRENT EVENTS *

GERMANY.

The Colorado Beetle (*Leptinotarsa decemlineata*) in 1941 †

The Colorado beetle infested zone was approximately the same as in 1940. The beetle, in its different stages of development, was reported, during the year 1941, in 164 municipal and rural districts (174 in 1940), and in 3250 communes.

The cool weather during April and the first half of May delayed the appearance of the hibernating adults; in fact they only began to come out of the ground after mid May. The maximum development of the larvae took place during the period from mid June to after the second decade of July, period during which the temperature was highest.

The adults of the new generation began to appear during the first decade of the month of July. The second larval generation was observed from mid July; on the whole, however, it does not seem to have attained full development. An astonishing fact was that already during the first decade of August, the adults of the new generation ceased feeding and started burrowing into the ground. In fact, with the exception of certain relatively warm localities, where up to the beginning of October some isolated adult beetles still appeared, the parasite, during the first half of September, began to disappear from the fields.

The first adult beetle reported resulted, from ploughing operations, at Worms on April 4. The first adult beetle attacking plants as also the first egg masses were observed on May 14 at St Wendel. The first larvae were found on June 1 in three different districts of the Lahr district (Kippenheimweiler, Mahlberg and Orschweier). The first nymphs were reported on June 23 at Besseringen (Merzig District), the first adult beetles of the new generation at Saarburg on July 1. Finally, the ultimate adults were observed during the first days of October.

Conformably from the previsions made from the observations of the preceding year, contamination was intense in Baden, Westmark and in Hesse. Despite an advance made by this pest, the total number of foci reported in the region of North Moselle was much less than expected. On the other hand, infestation,

* Under this and the next heading the countries are arranged in French alphabetical order.

† Communication from the 'Biologische Reichsanstalt für Land- und Forstwirtschaft', Berlin-Dahlem, Germany, official correspondent of the Institute.

in intensity and density, was appalling in Alsace and Lorraine, newly incorporated, as well as in the district of Malmedy. Infestation was also very severe in some parts of Luxemburg. However, in consequence of the immediate measures taken and effective spraying operations, the Colorado beetle was held in check and no damage was caused. It was even possible to prevent all losses in the infested centres of Lorraine where, the previous year, the fields had been completely devastated by this pest. An extension of the invaded zone towards the east has again been successfully checked. The control organized by the military authorities in the eastern departments of occupied France, where the Colorado beetle situation was no less serious than in Lorraine, has had a decisive effect. In this way, not only have appreciable economic losses been avoided, but the danger of invasion menacing German territory has also been considerably reduced.

FINLAND.

Eriophyes tulipae, as an Onion Parasite *

In October, 1937, W. B. Carter found in Sacramento, California, on the bulb scales of *Tulipa* a mite which was described the following year by Keifer under the name of *Eriophyes tulipae*. This mite was very probably introduced from the Netherlands. In fact Keifer writes: ' The bulbs are said to have originated in Holland '.

At the beginning of May, 1942, Dr A. Vaarama presented me with some onions (*Allium cepa* L.) taken from the School of Horticulture at Lepaa which were attacked by a species of *Eriophyes*. During storage at the School, these onions had developed some leaves 3 to 5 cm. long on which the mites appeared, in parts, like a white floury dust. The parasite was found to be identical with *E. tulipae* Keifer.

It was not possible to ascertain the origin of the onions, but it was soon established that the mite was also found on onions at Helsinki and that all the consignments of infested onions came from the same plant breeder in southern Finland. The plant breeder in question declared that, several years previously, he had imported the basic material from which he had developed his own special type of onion from the Netherlands.

This mite causes severe damage to onions which are soon completely destroyed by moulds. All the onions attacked which I had occasion to observe were incapable of developing. At Lepaa losses were estimated at approximately 30 per cent.

The severe attack of the parasite appears rather astounding. As it is possible, however, that the mites breed in March-April or even throughout the winter, it is understandable that their number may already be considerable in May.

As yet nothing is known as regards control measures.

* Communication from the official correspondent of the Institute, Prof. Dr J. I. Liro, Phytopathological Institute of the University, Helsinki, Finland.

LIBYA.

Experiments for Controlling the Olive Fly in Tripolitania with the De Luca Method *

The research work with the control method of De Luca against the olive fly (*Dacus oleæ*), began by myself in 1938 in Libya—the method was tried out in 1937 also against the Mediterranean fruit fly (*Ceratitis capitata*)—were continued in 1939-40-41.

In July, 1938, I followed, on behalf of the Libyan Government, the official experiments which were carried out for the Ministry of Agriculture and Forests in the territory of Francavilla Fontana, in Apulia, with the method and formula made known by Sig. Ignazio De Luca.

As soon as I returned to Libya, in September, I carried out the first spraying on five olive plants (local variety 'Scemlali') with a mixture of the following composition:—

Water	100	litres
Iron sulphate	2.5	kg.
Calcium polysulphide, 35° Baumé	4	litres
Solid creoline	0.5	kg.
Milk of lime	approximately 5	litres

enough to obtain a slightly alkaline reaction.

At the time of treatment (September 18), the olives very abundant on the five plants selected, were infested by the fly to the extent of 12.6 per cent. on an average and very still far from the ripening stage.

Spraying was effected with an ordinary pressure pump, provided with an extension injection pipe and a spray jet; all the crown of each tree was properly soaked both inside and out, taking particular care to thoroughly cover the drupes with the liquid.

While the spray was still wet, the plants treated remained a black colour, subsequently becoming greyish and finally a rust colour. Both the drupes and the other parts of the plant invested by the mixture presented a closely adhering patina which, however, was easily rubbed off with the fingers.

While it resisted sufficiently well to fairly heavy rain, always in the relative sense, this patina, on the contrary, was removed, particularly in the top parts of the crown, in consequence of the friction caused at every breath of wind.

Owing to this disadvantage, I was obliged to spray again on October 5 three of the five plants under treatment, not until after taking samples of the olives on which I found an average infestation of 14.3 per cent.

* Communication from Dr GIUSEPPE M. MARTELLI, Assistant Director at the Agricultural and Zootechnical Experiment Centre of Libya, Chief of the Section of Agricultural Entomology and Zoology, Tripoli, Libya.

If the quantity of liquid employed in the first spraying was 70-90 litres for each plant (which had an average diameter of five metres of crown projection and a height of six metres), in the second, it was appreciably lower (30-45 litres), because it was sufficient to renew wetting those parts of the plant where the patina had been removed through the wind.

Further taking of samples, effected on October 20, showed that, while infestation remained constant in the three plants subjected to the double treatment, it had increased to 17 per cent. in the plants treated only once and up to 48.9 per cent. in the nearby control plants. At this date, the olives of these last plants had to a large extent become blackish, while, on the plants under treatment, on the contrary, practically all the fruits were still green. At the beginning of November, during harvesting of the olives, I again calculated percentage of infestation: the control plants showed an infestation of 88 per cent., those treated twice within limits not exceeding 15 per cent. and finally those treated once only, 22-25 per cent.

Harvesting ended at the beginning of December; the last samples gave the following percentages of infestation:—

Control olives	100	per cent.
Olives treated once	32.9	» »
Olives treated twice	16.6	» »

The increases in infestation from the period of the first treatment up to the time of harvesting were respectively 87.70 per cent., 20.6 per cent. and 4 per cent.

I took care not to have the olives of a large branch of one of the control trees and those of a large branch of a tree treated twice collected.

In the second decade of January, 1939, all the olives of the control plants had fallen, while the greater part of those of the plant treated twice were turgid, glossy, firmly attached to the peduncle and for the greater part still free from *Dacus* infestation. They were entirely destroyed, however, in the days that followed through the voracity of the birds. In regard to yield in oil, yield which for evident reasons cannot be established on equivalent weight, but on equivalent number of treated and non-treated olives, exceeding satisfactory results were obtained; with a Soxhlet extractor the former gave a yield of 16.2 per cent. and the latter 12.7 per cent.

In view of the fact that the different substances constituting the mixture might affect the quality of the oil, I caused to be crushed, without preliminary washing, several kilograms of olives treated twice in a small special press. It clearly appeared, however, both from the organoleptic and the chemical examination (even only as regards acidity), that the oil obtained was very fine, having an acidity not higher than 1 per cent., without any peculiar flavour, extraneous odours, while the oil extracted from control olives attained an acidity of 4-5 per cent.

Encouraged by the results of these first experiments, I carried out another, in 1939, on table olives. In this case, I employed a Vermorel motor pump with which I sprayed 12 olive plants belonging to different varieties not all exactly identified.

No substantial modifications were made in the formula and I limited myself to reducing slightly the percentages of iron sulphate and calcium polysulphide which proved excessive for the purpose in view.

The first spraying took place on June 4, namely as soon as I observed the first punctures of *Dacus* on the olives. On June 10, the control plants, including some of varieties very susceptible to the olive fly, presented an infestation which attained 90 per cent., while the treated olives were quite sound. On June 20, many of the drupes being entirely or partially uncovered owing to their size and the disappearance of the patina through the wind, I carried out a second spraying which was sufficient up to time of harvesting. At that time (first decade of September), the fruits of the control plants presented, for some varieties, an infestation of 100 per cent., while those of the treated plants, belonging to the same varieties, showed a maximum infestation of 8 per cent.; these latter were also slightly late in maturing and presented, in consequence, a development proportionately inferior to the control olives so that, to eliminate bitterness, it was necessary to delay harvesting for some twelve days.

Storage tests carried out with these olives gave completely favourable results, as after over a year, they had an appearance and flavour entirely similar to those of the olives from the control plants.

Both with the experiments of 1938 and those of 1939, no apparent consequence was observed, except a slightly accentuated fall of the old leaves; moreover, the treated plants emanated, for a long time, a slight odour of sulphur dioxide until the autumn rains washed off the greater part of the patina. On the other hand, the smell of creoline disappeared after a few days.

In 1940 and 1941, owing to war conditions, I limited myself to small scale experiments on portions of the crown of some plants, employing much more simple mixtures, such as:—

(1)	Water	100	litres
	Milk of lime	25	»
	Soap	1	kg.
(2)	Water	100	litres
	Calcium polysulphide	1	»
	Milk of lime	10	»
(3)	Water	100	litres
	Milk of lime	25	»
	Solid creoline	0.5	»
(4)	Water	100	litres
	Milk of lime	25	»
	Powdered clay	2	kg.
	Soap	0.2	»
(5)	Water	100	litres
	Milk of lime	25	»
	Fuller's earth	2	kg.

Although the results obtained with some of these formulae were encouraging, I do not think them worth taking into consideration, partly because the exiguity of the experiments carried out do not make for trustworthy judgment.

From the experiments on the whole, the fact remains that the control method of De Luca is worth an attentive and close study.

The solution of the problems connected with this method, such as the use of considerable quantities of water and the improvement of the formulae to make them simple and economic, in particular by good adhesives and soaking material, in place of creoline and soap, should be the aim of our experimenters who will take example from the efforts accomplished in some forty years by our best scientists in combatting one of the greatest scourges of agriculture.

LEGISLATIVE AND ADMINISTRATIVE MEASURES

Germany. — An Amendment dated April 1, 1942 modifies the general provisions of March 7, 1938 regulating seed testing [see this *Bulletin*, 1938, No. 7, p. 150]. (*Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin, Anfang Juni 1942, 22. Jahrg., Nr. 6, S. 42).

*** By Decree of April 30, 1942 the control of the Plant Protection Service passes within the competency of the administrative powers of the Reich Farmers' Leader ('Reichsbauernführer'). Each agricultural administrative district ('Landesbauernschaft' corresponding approximately to the domain of a province) is provided with a Division from the Plant Protection Service which in turn may, on authorization of the 'Reichsbauernführer' detach regional and specalized branches like the dozen already in operation in different parts of the country. (*Ibid.*, S. 41).

Spain. — An 'Orden' dated July 11, 1942 contains the instructions relative to the organization of the anti-locust campaign. (*Boletín Oficial del Estado*, Madrid, 16 de julio de 1942, año VII, núm. 197, pág. 5187).

Italy. — The Ministerial Circular No. 268 of April 1, 1942 authorizes the wine-growers desirous of trying out fungicides not containing copper in the control of downy mildew of the vine [*Plasmopara viticola*] to carry out this testing under certain conditions and, in particular, at their own risk. (*Bollettino Ufficiale del Ministero dell'Agricoltura e delle Foreste*, 1-11 maggio 1942, anno XIV, n. 13-14, pp. 667-668).

*** Ministerial Circular No. 269 dated April 7, 1942, regulates the distribution of chemical fertilizers and fungicides. (*Ibid.*, pp. 669-670).

*** Ministerial Circulars Nos. 275 and 276 of April 14, 1942 refer to the control of the sparrow with a view to protecting the wheat crop. (*Ibid.*, pp. 672-673).

*** Two Ministerial Decrees, dated June 6, 1942, declare compulsory in the territory of the provinces of Ravenna and Forli the control of beet tortoise beetles (*Cassidula vittata* and *C. nobilis*) by dusting with calcium arsenate, spraying with lead arsenate preparations, trap plants as well as by other methods to be indicated by the Royal Observatory of Phytopathology at Bologna.*

Morocco (French Zone). — A Vizirial Decree of June 10, 1942 (25 joumada I 1361) orders, *inter alia*, that consignments of tomatoes, eggplants or potatoes intended for or having to pass through the French Zone of the Sherifian Empire, may only be effected if new packing material is employed.

As a temporary measure, for the duration of hostilities, the Plant Protection Inspector may authorize the importation of these plant products in used packs, if he considers that there is no danger in doing so. He may prescribe in this case any sanitary measure he deems necessary, such as putting into packs of Moroccan material at the import port or frontier post.

The importer is required to furnish proof of the exact origin and place of cultivation of the potatoes, tomatoes or eggplants imported.

The expedition of potatoes: (*a*) from fields in the territory of the countries invaded by the Colorado beetle (*Leptinotarsa decemlineata* Say and *L. multitaeniata* Stål); (*b*) or having passed in transit through these countries, by any route whatsoever; (*c*) or taken from fields situated in the regions bordering invaded countries, when the Colorado beetle has been reported at less than 50 km. from the frontier, should have been made conformably with the following provisions:

The tubers should have been cleaned and packed at the port where loaded and not at any other place. These operations should have been carried out under the actual supervision of an officer of the Plant Protection Service of the country of origin or transit.

The tubers may have been cleaned by the wet or dry method and under conditions enably the soil to be removed as well as any other substance adhering to the tubers or mixed among them.

When the sanitary inspection effected at the entry to the French Zone of the Sherifian Empire indicates that cleaning was not carried out or was insufficient, the consignment is refused.

The packing and handling of the cleaned tubers should have been carried out with new sacks, covers, cloth, cases, casks, baskets, etc. and in premises separate from those in which cleaning was effected.

The packs prepared according to the instructions prescribed above should have been immediately sealed in the presence of the officers who supervised the aforesaid operations indicated.

Consignments of potatoes to which either paragraphs (*a*), (*b*) or (*c*) refer, must be accompanied by a certificate conformably with the example attached to this Decree. This certificate which should testify that the tubers have been

* Communication from the Ministry of Agriculture and Forests, Rome, Italy, to the International Institute of Agriculture.

cleaned and packed and the packs sealed in the presence of the officer who signs and according to the requisite conditions, should indicate the characteristics enabling the identification of the consignment.

These provisions, excepting those regarding cleaning, are applicable to tomatoes and eggplants: (*a*) from crops grown in the territory of countries invaded by the Colorado beetle; (*b*) or having passed in transit through the territory of these countries, by any route whatsoever; (*c*) or originating from fields situated in the territory of the regions bordering invaded countries, when the Colorado beetle has been reported less than 50 km. from the frontier.

Consignments of potatoes, tomatoes and eggplants which come under the case of paragraphs (*a*), (*b*) or (*c*) are only authorized for importation when the Governments of the countries in question have supplied the Sherifian Government with the names and signatures of the officers appointed for the supervision prescribed at the ports, as well as a copy of the seals.

The import in the French Zone and the transit through this zone of potatoes, tomatoes and eggplants in bulk are prohibited; quantities of not more than 10 kg. may be allowed entry unpacked.

Consignments of potatoes, tomatoes and eggplants comprising packs not conformable to the prescriptions of this Decree may be returned in their entirety.

The application of the prescriptions of this Decree is made without prejudice to those of the provisions of the Dahir of September 20, 1927 (23 rebia I 1346) regulating the plant sanitary policy and the Decrees taken in the application of this text.

The Vizirial Decree of August 1, 1936 (12 joumada II 1355) [see this *Bulletin*, 1936, No. 10, p. 227] relative to the application of the sanitary measures regarding potatoes, tomatoes and eggplants on their entry into the French Zone of the Sherifian Empire is repealed. (*Bulletin Officiel*, Rabat, 10 juillet 1942, XXXI[ème] année, n° 1550, p. 579-580).

Portugal. — 'Portaria' No. 10.054 dated March 24, 1942 regulates the distribution of copper sulphate available for the treatment of vines as well as that of other copper fungicides. (*Diário do Góverno*, Lisboa, 24 de Março de 1942, I[a] Série, num. 68, págs. 266-267).

Rumania. — Law No. 36 (Decree Law No. 131) of January 14, 1942 aims at the manufacture of copper sulphate by means of copper ash and slag as well as from alloys of this metal. (*Monitorul Oficial* (Partea I), Bucureşti, 15 Ianuarie 1942, Anul CX, Nr. 12, pag. 223-224).

*** Ministerial Decision No. 2.195 dated February 5, 1942 commissions the technical staff authorized by the Division of Wine-growing and Horticulture, to take samples of all the insecticides and fungicides at establishments, drug-shops, pharmacies, etc. who manufacture or sell these products, in order to carry out a re-examination of them. (*Ibid.*, 9 Februarie 1942, Nr. 33, pag. 878).

*** Law No. 313 (Decree Law No. 1.174) of April 21, 1942 establishes the modalities relative to the organization of the control of forest insect pests. (*Ibid.* 22 Aprilie 1942, Nr. 93, pag. 3128-3129).

Switzerland. — The Plant Protection Section of the Federal Establishment for experiments on fruit crops, wine-growing and horticulture at Wädenswil has published the first and second supplements to the list of authorized control methods against plant diseases and pests for the year 1942. *Schweizerische Zeitschrift für Obst-und Weinbau*, Wädenswil 1942, 51. Jahrg., Nr. 9, S. 200-201, Nr. 14, S. 302-304).

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